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REMARKS

At the time of the Office Action dated April 17, 2003, claims 1-6 and 12-20 were pending in this application. Of those claims, claims 1-6 have been rejected and claims 12-20 have been withdrawn from consideration pursuant to the provisions of 37 C.F.R. § 1.142(b). Claims 1 and 4-5 have been amended, and claim 6 has been cancelled. Care has been exercised to avoid the introduction of new matter. Specifically, claim 1 has been amended by incorporating the limitations of claim 6 therein, and consequently claim 6 has been cancelled. Claim 4 has been amended to be placed in independent form, and claim 5 has been amended to clarify the limitations recited therein. Applicant submits that the present Amendment does not generate any new matter issue.

Applicant notes that the Information Disclosure Statement (IDS) and cited art filed January 18, 2002, has not been properly acknowledged. Although the Examiner indicated that this IDS was considered, the references cited in the accompanying PTO-1449 Form were not initialed by the Examiner. Applicant hereby respectfully requests that the Examiner clarify the record by providing an appropriately initialed copy of the PTO-1449 Form indicating consideration of the cited prior art.

In the third enumerated paragraph of the Office Action, the Examiner objected to the drawings pursuant to 37 C.F.R. § 1.83(a), requiring depiction of the claimed conductive parts on the chip in claims 1 and 2. In response, it is proposed to amend Fig. 7A, as indicated on the attached photocopy, to depict multiple bonding pads. As bonding pads are conductive, these

bonding pads can illustrate the claimed conductive parts. Accompanying this Amendment is a Request for Approval of Drawing Amendment and proposed drawing corrections for Fig. 7A. Applicant, therefore, respectfully submits that the imposed objection to the drawings has been overcome and, hence, solicit withdrawal thereof.

CLAIM 5 IS REJECTED UNDER THE SECOND PARAGRAPH OF 35 U.S.C. § 112

In the sixth enumerated paragraph of the Office Action, the Examiner asserted the limitations recited in claim 5 are indefinite. This rejection is respectfully traversed.

Initially, Applicant notes that claim 5 has been amended. Specifically, claim 5 now recites that "the nearest bend ... is located at a position outside a range," and the range is defined as "extending over said chip and defined by edges of said chip." Applicant, therefore, respectfully submits that one having ordinary skill in the art would have no difficulty understanding the scope of claim 5, particularly when reasonably interpreted in light of the written description of the specification. Thus, the imposed rejection of claim 5 under the second paragraph of 35 U.S.C. § 112 have been overcome and, hence, Applicant respectfully solicits withdrawal thereof.

CLAIMS 1-2 AND 4 ARE REJECTED UNDER 35 U.S.C. § 102 AS BEING ANTICIPATED BY SHIGENO ET AL., U.S. PATENT NO. 6,372,625 (HEREINAFTER SHIGENO)

In the eighth enumerated paragraph of the Office Action, the Examiner asserted that Shigeno discloses a semiconductor device corresponding to that claimed. This rejection is respectfully traversed.

Initially, Applicant notes that claim 1 has been amended to include the limitations previously presented in claim 6. As the Examiner has already admitted that Shigeno fails to identically disclose the claimed invention as recited in claim 6 and claim 1 includes the limitations of claim 6, Shigeno also does not identically disclose the claimed invention as recited in claim 1. Claim 2 is dependent upon claim 1 and is similarly not identically disclosed by Shigeno.

Claim 4 has been placed in independent form, and on page five of the Office Action, the Examiner stated the following:

Regarding claim 4, Shigeno et al. teach substantially the entire claimed structure as applied to claim 1, and further teach the bonding wires being sealed such that one of the bends (see 23 in dotted line configuration in Fig. 2) is exposed on the surface of the resin package (Col. 4, line 62).

The factual determination of lack of novelty under 35 U.S.C. § 102 requires the identical disclosure of each element of a claimed invention in a single reference. As part of this analysis, the Examiner must (a) identify the elements of the claims, (b) determine the meaning of the elements in light of the specification and prosecution history, and (c) identify corresponding elements disclosed in the allegedly anticipating reference. That burden has not been discharged.

In particular, Applicant notes that the Examiner's reliance of the dotted line¹ in Fig. 2 of Shigeno to disclose the limitations recited in claim 4 is misplaced for several reasons. Claim 4 specifically recites "at least one of said plurality of bends is exposed on a surface of said sealing resin package." The dotted lines illustrated in Fig. 2 are, at best, ambiguous as to whether or not

¹ Although the Examiner referred to this feature with reference numeral 23, reference numeral 23 in Shigeno does not refer to the dotted line but instead refers to a bend in the wire (column 4, lines 36-37).

the wire intended to be represented by the dotted lines breaks the surface of the molded body 17. In this regard, Applicant refers the Examiner to M.P.E.P. § 2125, which states "PROPORTION OF FEATURES IN A DRAWING ARE NOT EVIDENCE OF ACTUAL PROPORTIONS WHEN DRAWINGS ARE NOT TO SCALE" (capitalization in original). As Shigeno fails to state that the drawings are to scale, "it is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue."² Furthermore, Shigeno is completely silent as to whether the wire shown by the dotted lines extends to the surface of the molded body 17 or the wire shown by the dotted lines sealing material 6 stops short of breaking a surface of the molded body 17. Thus, it is not apparent that one having ordinary skill in the art would recognize that Shigeno teaches that at least one of a plurality of bends is exposed on a surface of a sealing resin package, as recited in claim 4.

This above analysis is further supported by the disclosure in the paragraph spanning columns 4 and 5 of Shigeno. Although this is the only paragraph in which the wire shown by the dotted lines in Fig. 2 is discussed, this paragraph is completely silent as to whether or not the wire shown by the dotted lines extends to the surface of the molded body 17. Instead, this paragraph focuses on how, by using a wire 16 disclosed in Fig. 2 in contrast to a conventional wire, a distance 50 from a chip end 26 to a lead terminal 26 can be reduced. Thus, there is no written disclosure within Shigeno that supports the Examiner's assertion that Shigeno teaches that at least one of a plurality of bends is exposed on a surface of a sealing resin package.

² See, Hockerson-Halberstadt, Inc. v. Avia Group Int'l, 222 F.3d 951, 55 USPQ2d 1487 (Fed. Cir. 2000).

Yet another problem with the Examiner use of the wire shown by the dotted lines in Fig. 2 is that Shigeno unambiguously states "[a] conventional bonding wire is shown by the dotted lines in FIG. 2" (column 4, lines 62-63). Referring to the arguments made in the previous paragraph, the wire 16 illustrated in Fig. 2 is being compared to the wire shown by the dotted lines. Thus, the wire shown by the dotted lines represents what Shigeno considers to be prior art and cannot properly be considered "within the same teaching" as the other features in Shigeno relied upon by the Examiner. For example, the Examiner pointed to bends 23, 24 in Fig. 2 to disclose the claimed "plurality of bends." However, the wire shown by the dotted lines in Fig. 2 is not shown as having a plurality of bends. Instead the wire shown by the dotted lines only includes a single bend. Therefore, the wire shown by the dotted lines fails to identically disclose the claimed "at least one of said plurality of bends is exposed on a surface of said sealing resin package" (emphasis added).

The above argued differences between the claimed semiconductor device and the device of Shigeno undermine the factual determination that Shigeno identically describes the claimed invention within the meaning of 35 U.S.C. § 102. Applicant, therefore, respectfully submits that the imposed rejection of claims 1-2 and 4 under 35 U.S.C. § 102 for lack of novelty as evidenced by Shigeno is not factually viable and, hence, solicits withdrawal thereof.

**CLAIM 3 IS REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON SHIGENO
IN VIEW OF WARK ET AL., U.S. PATENT NO. 5,847,445 (HEREINAFTER WARK)**

In the tenth enumerated paragraph of the Office Action, the Examiner concluded that one having ordinary skill in the art would have been motivated to modify the semiconductor device of Shigeno in view of Wark to arrive at the claimed invention. This rejection is respectfully traversed.

Claim 3 depends ultimately from independent claim 1, and Applicant incorporates herein the arguments previously advanced in traversing the imposed rejection of claim 1 under 35 U.S.C. § 102 for lack of novelty as evidenced by Shigeno. Specifically, the Examiner has already admitted that Shigeno fails to identically disclose the claimed invention as recited in claim 6 and claim 1 includes the limitations of claim 6. The secondary reference to Wark does not cure the argued deficiencies of Shigeno. Accordingly, the proposed combination of references would not yield the claimed invention. Applicant, therefore, respectfully submits that the imposed rejection of claim 3 under 35 U.S.C. § 103 for obviousness based upon Shigeno in view of Wark is not viable and, hence, solicits withdrawal thereof.

**CLAIM 6 IS REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON SHIGENO
IN VIEW OF KUMAZAWA ET AL., U.S. PATENT NO. 5,156,323 (HEREINAFTER KUMAZAWA)**

In the eleventh enumerated paragraph of the Office Action, the Examiner concluded that one having ordinary skill in the art would have been motivated to modify the semiconductor device of Shigeno in view of Kumazawa to arrive at the claimed invention. This rejection is respectfully traversed.

As claim 1 has been amended to include the limitations previously presented in claim 6, and claim 6 has been cancelled, Applicant will address the rejection of claim 6 as that rejection would apply to claim 1.

In establishing the requisite motivation to combine Shigeno and Kumazawa, the Examiner must make "clear and particular" factual findings as to any specific understanding or specific technological principle which would have realistically impelled one having ordinary skill in the art to modify the device disclosed by Shigeno in view of Kumazawa to arrive at the claimed invention.³ The Examiner must also recognize that as a general matter, "virtually all [inventions] are combinations of old elements."⁴ With these principles in mind, Applicant respectfully submits that one having ordinary skill in the art would not have been motivated to modify Shigeno in view of Kumazawa to arrive at the claimed invention.

On page seven of the Office Action, the Examiner asserted the following with regard to the requisite motivation to combine:

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the bend nearest to the inner lead being at a level higher than that nearest to the chip as taught by Kumazawa et al. so that the edge shorting can be prevented and the length of the wire loop can be increased in Shigeno et al's device.

³ Ruiz v. A.B. Chance Co., 234 F.3d 654, 57 USPQ2d 1161 (Fed. Cir. 2000); Ecolchem Inc. v. Southern California Edison Co., 222 F.2d 973, 56 USPQ2d 1065 (Fed. Cir. 2000); In re Kotzaab, 217 F.3d 1365, 55 USPQ 1313 (Fed. Cir. 2000); In re Dembiczak, 175 F.2d 994, 50 USPQ2d 1614 (Fed. Cir. 1999).

⁴ In re Rouffet, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998) (quoting Environmental Designs, Ltd. v. Union Oil, 713 F.2d 693, 218 USPQ 865 (Fed. Cir. 1993)).

It is apparent from this paragraph that the Examiner is asserting that one having ordinary skill in the art would have been motivated to modify Shigeno in view of Kumazawa for the alleged benefit of preventing edge shorting and increasing a length of a wire loop. The Examiner, however, has not established these benefits are a result of the proposed modification (i.e., the nearest bend to the corresponding inner lead being at a level higher than that of the nearest bend to the chip).

Kumazawa states that the benefits of preventing edge shorting and increasing length of the wire loop is a result of the methodology disclosed by Kumazawa (column 4, lines 10-23) and not the structure of the wire bonds. In fact, both Figs. 3 and 4 are described as illustrating a wire loop "shaped by the method of the present invention" (column 2, lines 9-12) (emphasis added). Furthermore, Fig. 3 shows that a nearest bend (1b) to an inner lead is not at a level higher than that of a nearest bend (1a) to a chip. As Fig. 3 is disclosed as being an embodiment of the claimed invention, it stands to reason that having the nearest bend to the inner lead be at a level higher than that of the nearest bend to the chip is not a necessary requirement to obtain the asserted benefits of preventing edge shorting and increasing a length of a wire loop. Therefore, one having ordinary skill in the art would not have been motivated to modify Shigeno in view of Kumazawa to arrive at the claimed invention to obtain the benefits of preventing edge shorting and increasing a length of a wire loop, because these benefits do not directly derive from the proposed modification. Applicant, therefore, respectfully submits that a rejection of claim 1 under 35 U.S.C. § 103 for obviousness based upon Shigeno in view of Kumazawa would not be viable.

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Applicant has made every effort to present claims which distinguish over the prior art, and it is believed that all claims are in condition for allowance. However, Applicant invites the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. Accordingly, and in view of the foregoing remarks, Applicant hereby respectfully requests reconsideration and prompt allowance of the pending claims.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417, and please credit any excess fees to such deposit account.

Respectfully submitted,

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